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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,889	10/30/2003	Mark A. Burns	UM-08280	9149

7590 06/05/2006
Peter G. Carroll
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EXAMINER

SCHNEIDER, CRAIG M

ART UNIT PAPER NUMBER

3753

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/696,889	Applicant(s) BURNS ET AL.	
	Examiner Craig M. Schneider	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-11 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-11, 29-34, and 36 is/are rejected.
- 7) ☒ Claim(s) 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/30/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The substitute specification was received on 2/21/2006. The substitute specification is approved.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 30, 7, 8, 10, 11, 29, 31-34, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Handique et al. (2002/0143437).

Handique et al. disclose a device comprising an inlet port (area between 75 and 77) in fluidic communication with a first microchannel, the first microchannel having a middle section and an end section, the end section intersecting a second microchannel (78) at a junction, wherein a first heater element (HTR1) is associated with the inlet port, a second heater element (HTR2) is associated with the middle section of first microchannel, and a third heater element (HTR3) is associated with the second microchannel at the junction, and wherein the inlet port is linked to pressure source and a vacuum source (75) as seen in Figures 6A and 6B (page 20, paragraph 155 – page 21, paragraph 161).

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Regarding claim 7, the pressure source is an air source.

Regarding claim 8, the junction is a "T" junction as can be seen by the figures.

Regarding claim 10, the meltable material is selected from a group consisting of solder, plastic, polymer, electrorheological fluid and wax.

Regarding claim 11, the melted material moves to the junction and the melted plug is allowed to cool.

Regarding claim 29, the substrate is selected from the group consisting of glass and silicon (page 8, paragraph 64).

Regarding, claim 31, a method comprising: providing a device comprising a meltable material, an inlet port linked to a gas source wherein the inlet port is associated with a first heater element, a stem microchannel comprising a second heater element wherein the stem microchannel is in fluidic communication with the inlet port, a main microchannel intersecting the stem microchannel, the main microchannel comprising a third heater element wherein the intersecting forms a junction, firing at least two of the heater elements under conditions such that the meltable material at least partially melts to create a melted plug, applying pressure with the gas source under conditions such that the melted plug is moved.

Regarding claim 32, wherein the firing of at least two of the heater elements comprise the first and second heater elements and the applying pressure of the gas source comprises generating a positive pressure, thereby moving the melted plug into the junction.

Regarding claim 33, wherein the firing of at least two of the heater elements comprise the second and third heater elements.

Regarding claim 34, wherein the applying of the gas source comprises a vacuum source, thereby retracting the melted plug out of the junction.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Handique et al. as applied to claim 30 above.

Handique et al. disclose all the features of the claimed invention except that the junction is configured as a "Y" junction. However, to employ a "Y" junction is considered to be an obvious design expedient over the "T" junction of Handique et al. which provides no new and/or unexpected results nor solves any stated problem. That is, there is no criticality associated with the recited operating characteristics providing any new and/or unexpected results over the "T" junction.

Allowable Subject Matter

6. Claim 35 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claims 7-11 and 29-36 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig M. Schneider whose telephone number is (571) 272-3607. The examiner can normally be reached on M-F 8:30 -5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel can be reached on (571) 272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMS *cms*
May 23, 2006


ERIC KEASEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700